



February 22, 2006

TO: Regional Project Development Engineers, and
Regional Hydraulic Engineers

FROM: Matthew J. Witecki, State Hydraulic Engineer

SUBJECT: Summary Update for March 2006 Hydraulic Manual

In 2004 and 2005, the Hydraulic Manual was rewritten and a brief summary of those changes has been posted on the HQ Hydraulics web page. Every March the Hydraulic Manual will be updated to reflect any changes in policy, corrections to the existing manual, or updates in technology. A summary of the March 2006 changes is noted below and pages revised are noted with a March 2006 date in the footer. Presently the Hydraulics Manual is available online at <http://www.wsdot.wa.gov/FASC/EngineeringPublications/library.htm>. Hard copies of the manual are available on request.

Chapter 1- Policy

In addition to minor changes, the following changes were made to the chapter:

- Removed reference to Regions petitioning HQ for Type A approving authority on projects with less than 100,000 sqft of impervious surfaces.
- Revised and clarified guidance for hydraulic report submittals including: retention schedule, number of reports, and paper or CD copies.
- Added information on who is responsible for the design of Engineered Log Jams and Large Woody Debris.
- Clarified who is responsible for Backwater Analysis.
- In Appendix 1-3, revised guidance for Outfall Database and other clarifications.

Chapter 2 - Hydrology

Minor corrections.

Chapter 3 - Culvert Design

In addition to corrections, the following changes were made:

- Outlet protection design pad guidance was added.
- Changed pipe minimum pipe diameter from 18" to 12" to match Chapter 6 guidance.

Chapter 4 – Open Channel Flow

- Added reference to Stream Habitat Restoration Guidelines (SHRG).
- Added web links for both HEC's and SHRG.
- Included design guidance for Engineered Log Jams and Large Woody Debris.
- Provided Outfall Inventory reference to Appendix 1-3.

Chapter 5 – Drainage of Highway Pavements

In additions to minor corrections, the following changes were made:

- Specified minimum distance from inlets to approach slabs, standard Plan A-4.
- Reference and picture of standard plan B-25a.
- Consideration for cumulative affects of bypass flow.

Chapter 6 – Storm Drains

- Defined the crown of a pipe.
- Inspect existing systems prior to starting drainage modifications.
- Reduced Storm Drain Design Calculations worksheet was reduced from 11x17 to 8.5x11.

Chapter 7 – Fish Passage

No change

Chapter 8 – Pipe Material

- Updated tables to include guidance for selecting corrugated culverts.
- Clarified ‘crown of pipe’ definition.

Chapter 9 – Highway Rest Areas

This Chapter was deleted in a previous revision; for additional information designers should contact HQ Hydraulics.

If you have any questions or comments regarding this memo, please feel free to contact Rocio (Rose) Peralta at (360) 705-7260 or Aimee Navickis-Brasch at (509) 324-6139.

MJW:asnb